NEWFOUND LAKE

2019 SAMPLING HIGHLIGHTS

Hemlock Brook Subwatershed

Blue = Excellent

Yellow = Fair

Red = Poor

Light Gray = No Data

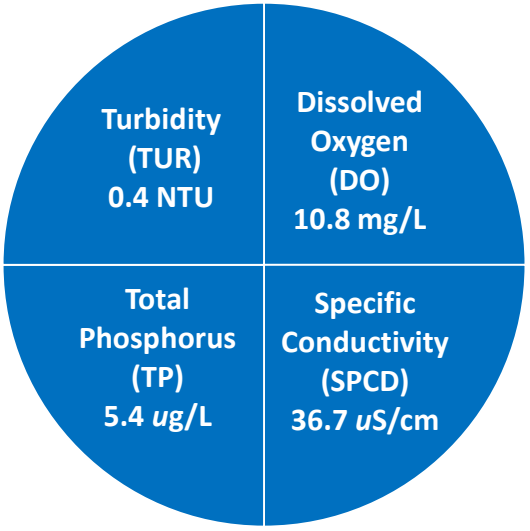


Figure 1. Hemlock Brook Subwatershed Average Water Quality (2019)

Table 1. 2019 Hemlock Brook Subwatershed Seasonal Average Water Quality Measurements.

Parameter	Assessment Criteria					Hemlock Brook Subwatershed Average (range)	Hemlock Brook Subwatershed Classification
Turbidity * (NTU)	< 0 - 5.0 Desirable	6 – 10 Low Impact	11 – 50 Moderate impact	51 – 100 Moderate – high impact	> 101 High impact	0.4 NTU (range: 0.3 – 0.5)	Desirable
pH (standard units)	< 5.5 suboptimal for successful fish growth and reproduction		5.5 – 6.5 sufficient for successful fish growth and reproduction		6.5 – 8.5 optimal range for fish growth and reproduction	6.8 standard units (range: 6.6 – 7.3)	Optimal range for fish growth and reproduction
Dissolved Oxygen (mg/L)	< 5 Suboptimal for successful brook trout growth and survival			> 5 Typically sufficient for successful brook trout growth and survival		10.8 mg/L (range: 8.3 – 13.3)	Typically sufficient for successful brook trout growth and survival
Specific * Conductivity (uS/cm)	0 – 100 Normal	101 – 200 Low Impact	201 – 500 Moderate Impact	> 501 High Impact		36.7 *u*S/cm (range: 24.1 – 49.3)	Normal
Total * Phosphorus (*u*g/L)	< 10 ug/L Ideal	11 - 25 Average	26.0 – 50.0 More than desirable	> 51 Excessive		5.4 *u*g/L (range: 4.8 – 5.9)	Ideal

* Water quality assessment criteria are provided by the New Hampshire Department of Environmental Services for general guidance only. Natural variations among rivers and streams will occur and should be considered when interpreting the water quality data.

Table 2. 2019 Hemlock Brook Subwatershed Seasonal Average Water Quality Inter-comparison among Sampling Stations.

Site ID *	Average Turbidity (NTU)	Average Specific Conductivity (*u*S/cm)	Average Total Phosphorus (*u*g/L)	Average Dissolved Oxgyen (mg/L)	Average pH (standard units)
HB H01	0.4	36.7	5.4	10.8	6.8

* Refer to Figure 4 for a map of the sampling locations.

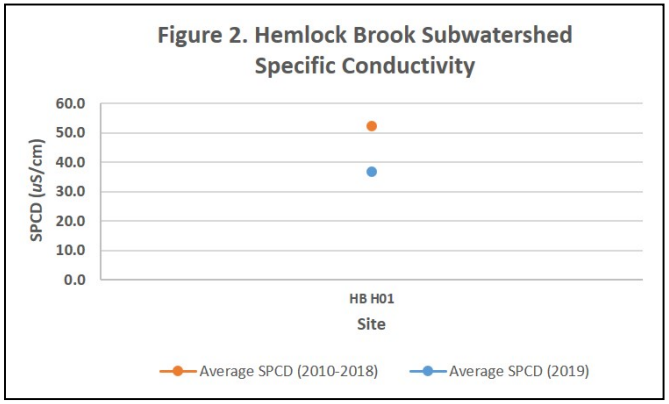
Hemlock Brook Subwatershed Highlights

The Hemlock Brook subwatershed is the sixth largest stream drainage network that feeds into Newfound Lake. The 895-acre Hemlock Brook subwatershed is monitored with one active sampling location positioned at the intersection of Hemlock Brook and Route 3A. The single Hemlock Brook sampling location was selected to characterize the overall water quality within the Hemlock Brook subwatershed.

The 2019 Hemlock Brook water quality measurements generally indicate high water quality. A comparison between the 2019 and the 2011-2018 average specific conductivity data indicates the 2019 measurement was lower than the 2011-2018 average (Figure 2).

The 2019 average turbidity (suspended soil and other particles) level and the average total phosphorus (nutrient) concentration were low in the Hemlock Brook subwatershed (Figure 3).

Dissolved oxygen concentrations remained sufficient to support successful fish growth and reproduction.



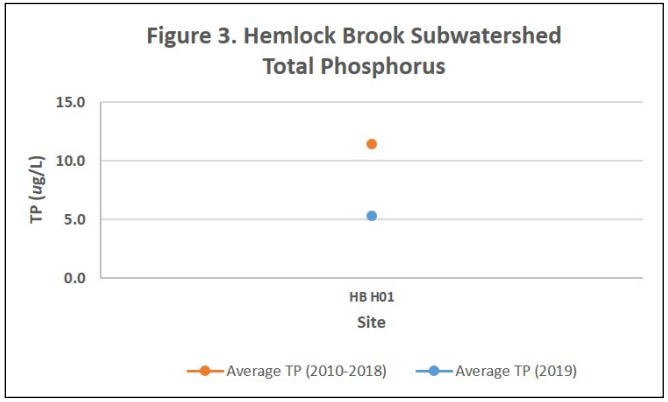


Table 3. Comparison of Seasonal Average Water Quality by Subwatershed (2019)

Subwatershed	Average * Turbidity (NTU)	Average * Specific Conductivity (*u*S/cm)	Average * Total Phosphorus (*u*g/L)	Average * Dissolved Oxygen (mg/L)	Average * pH (Standard Units)
Black Brook	2.2	159.6	9.3	12.2	6.4
Cockermouth River	0.5	39.9	4.9	11.8	6.4
Dick Brown Brook	0.9	40.2	7.7	10.5	6.6
Fowler River	0.6	29.3	7.7	10.9	6.3
Georges Brook	0.5	39.0	6.8	10.8	6.4
Hemlock Brook	0.4	36.7	5.4	10.8	6.8
Whittemore Brook	0.3	26.9	5.0	11.0	6.6
Tilton Brook	0.4	107.3	7.5	11.1	6.7

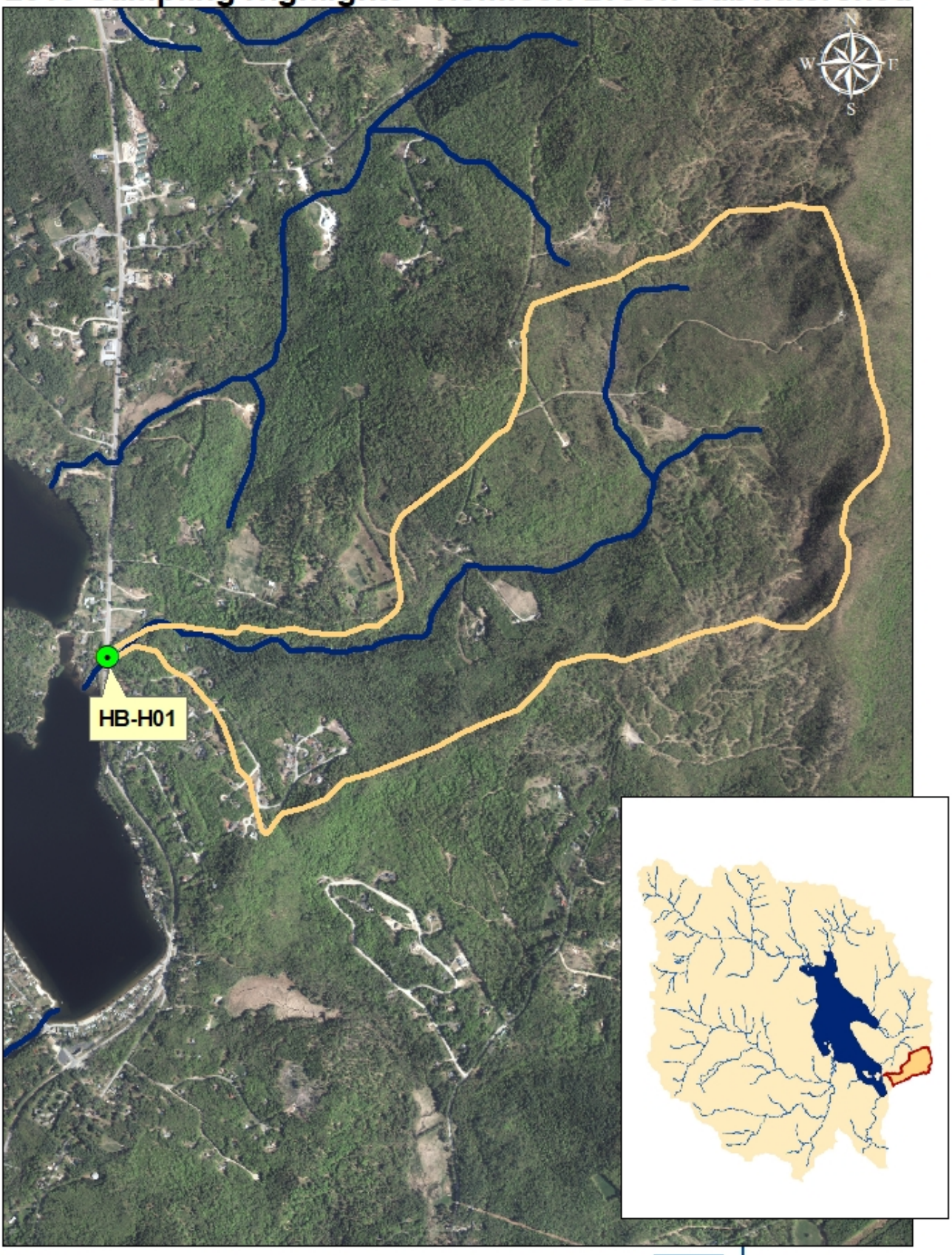
* The displayed water quality results are average values for all sampling locations within the respective subwatersheds.

Recommendations for Property Owners:

Implement Best Management Practices within the Newfound Lake watershed to minimize the adverse impacts of polluted runoff and erosion into the lake. Refer to “Landscaping at the Water’s Edge: An Ecological Approach” and “New Hampshire Homeowner’s Guide to Stormwater Management: Do-It-Yourself Stormwater Solutions for Your Home” for more information on how to reduce nutrient loading caused by overland run-off.

- https://extension.unh.edu/resources/files/Resource004159_Rep5940.pdf
- https://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-11.pdf

Figure 4.
2019 Sampling Highlights - Hemlock Brook Subwatershed



Aerial Orthophoto Source: NH GRANIT
Site location GPS coordiniates collected by the UNH Center for Freshwater Biology

NH Extension